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EUROPEAN CROWDLENDING PLATFORMS: EVALUATING RISKS AND COMPARING PLATFORMS FROM INVESTORS' PERSPECTIVE

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Abstract

Lending-based crowdfunding has been growing rapidly during the last decade offering a new asset class for investors to invest in. A number of intermediaries connecting potential borrowers and lenders with each other, called crowdlending platforms, have been founded across Europe. Investors have plenty of options to invest in different kind of high-yielding loans, for instance consumer loans and business loans, through lending platforms. Platform selection is crucial for investors but unfortunately, the literature regarding lending platforms is scarce. Therefore, this seminal study focuses on introducing, discussing and evaluating the key risks related to crowdlending and comparing crowdlending platforms from investors' perspective. The study answers to the question how to evaluate and mitigate the risks that investors are facing when investing through lending platforms. Further, the study provides a wide overview of European crowdlending market and platform practices.

The empirical part of the study is mostly qualitative and comprises of two different datasets: (i) questionnaire responses from 19 European crowdlending platforms and (ii) hand-collected data from public sources including 108 European lending platforms. Findings of the study show that the crowdlending market is diverse including various business models, loans and practices. The platforms can control and mitigate most of the risks by high-class risk policies and by good-quality practices, which makes platform selection the most crucial decision for investors to make when investing in this relatively new asset class. Remarkable is that the lack of platform transparency and the weak availability of data complicates investors' evaluation process and makes platform-level comparison challenging. Therefore, I suggest that investors perform a holistic due diligence for platforms before investing, and this study give a useful framework for investors to pay attention to relevant factors when evaluating risks and comparing platforms with each other.

Keywords
Crowdfunding Platforms, P2P Lending, Alternative Investments

Additional information

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Oulu, April 2019 Henri Palomäki

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1 INTRODUCTION

Crowdfunding as a form of financing has become much more prevalent in the last decade. The most common form of crowdfunding is crowdlending, or peer-to-peer lending (P2P lending), where individuals or professional investors lend money to consumers and small businesses. For capital seekers, crowdlending is an alternative channel for borrowing; for investors, crowdlending presents an opportunity to lend money and gain a return on their investment. Since 2005, when the first P2P consumer lending platform *Zopa* was launched, several crowdlending platforms, where potential borrowers and lenders can meet have been started. Investors have plenty of platforms to choose from, but they differ a lot from each other when evaluating their geographical location, the type of loans they intermediate, credit scoring process and their own exposure to the loans that they take on the platform.

Considering the current investing environment where bond yields are low, crowdlending offers an attractive alternative asset class for investors, in terms of high returns and good diversification. Institutional investors have also noticed the rise of the phenomenon, and P2P lending is already recognized as a new asset class in institutional investor's portfolio. For instance, Cambridge Centre for Alternative Finance (CCAF) found in their yearly industry report that in Europe in 2016, with the exception of the UK, the proportion of institutional investment grew from 26 to 45% in P2P consumer lending and from 24% to 29% in P2P business lending (Ziegler et al. 2018c). In addition to lucrative yields, crowdlending offers portfolio diversification, low correlation and easy access to consumer and small business loans. However, the number of P2P lending platforms is continuously increasing which means that investors have many different options to invest in this new asset class. Therefore, there is a need to investigate crowdlending platforms more comparatively and evaluate the risks related to them from investors' perspective.

The purpose of this study is to identify what are the key risks when investing in lending-based crowdfunding in Europe. The selection of the platforms through which to invest in this asset class is vital, and this study covers factors which investors should evaluate before selecting the platform. The goal is to identify some common features which make one crowdlending platform riskier than others from an investor's

perspective. Further, this study gives an investor an overview of the current European crowdlending market and the different operators within it.

According to CCAF, the year-on-year growth in P2P consumer lending in Europe was 90% in 2016 and in P2P business lending 65% (Ziegler et al. 2018c). Although the growth of the market has started to gradually decrease, crowdlending still has much potential to grow. However, there is a gap in the literature around this kind of research, since there are only few studies that evaluate platforms with each other from an investor's point of view. Many studies focus on loan success rates and a default risk of single loans instead of evaluating platforms from the investor's perspective.

Since an extensive platform-level study about lending-based crowdfunding does not yet exist, I decided to experimentally investigate it with following research questions:

What kind of lending-based crowdfunding platforms exist in Europe?

What are the key risks for investors when investing in lending-based crowdfunding?

How to compare and evaluate risks related to crowdlending platforms?

The comparison of the platforms was done by observing platforms' practices regarding due diligence processes, transparency, data collection and business model. The data of the study consists of two separate datasets: a questionnaire consisting of responses of 19 European lending platforms and the hand-collected dataset including 108 observations. The study was done with the cooperation with a Finnish company called Investment Intelligence Oy.

The findings of the study indicate that the key risks for investors in crowdlending are credit risk, platform risk, liquidity risk, regulatory risk and interest rate risk. Platforms can control most of the risks and since most of the investments are made by auto-selection tools, the most crucial decision for investors is to select the platform through which to invest. However, the comparability of platforms turned out to be relatively difficult and if an investor truly wants to understand the risks and returns that a platform offers, one must perform a holistic due diligence for a platform. The main

reasons for this are the diversity of the European lending market making the comparability of platforms challenging, the lack of transparency of the platforms and the weak availability of good-quality data in general.

This study contributes to the existing literature by breaking ground with its originality within the scarce research of crowdlending platforms. The study opens the risks related to lending-based crowdfunding and lending platforms from investors' perspective and creates a framework for future researchers how to compare and evaluate lending platforms. When investing in P2P loans, platform selection is the investor's most important decision. After having a solid understanding of the risks, investors should naturally evaluate returns that the platforms offer. That would require digging way more deeply in platforms' credit scoring process and loan books, and therefore, I leave that question to be answered for future researchers.

1.1 Previous Literature

Crowdfunding is a recent phenomenon and the literature, while increasing, is not yet comprehensive. There is, however, several paths that researchers have taken. Crowdfunding and the economics behind it have been studied by multiple researchers (Agrawal, Catalini & Goldfarb 2014; Belleflamme, Lambert & Schwienbacher 2014; Moenninghoff & Wieandt 2013; Mollick 2014). Further, Kallio and Vuola (2018) published an extensive piece of work about crowdfunding in general, and also Moritz and Block (2016) provide a comprehensive literature review of the current situation of academic research in crowdfunding. Crowdfunding intermediaries have also been studied from different perspectives. Haas, Blohm and Leimeister (2014) distinguished between crowdfunding platforms which differ in their value proposition, whereas Belleflamme, Omrani and Peitz (2015) explored different business models of platforms and Gedda, Nilsson, Såthén and Søilen (2016) discussed finding the optimal platform model for both funders and entrepreneurs.

When overviewing about the literature specifically surrounding lending-based crowdfunding, it covers the topics as funding success (Barasinska & Schäfer 2014, Dorfleitner et al. 2016) and as determinants of borrower's default and credit scoring models (Emekter, Tu, Jirasakuldech & Lu 2015; Polena & Regner 2018; Serrano-

Cinca & Gutiérrez-Nieto 2016; Teply & Polena 2019; Verbraken, Bravo, Weber & Baesens 2014). Also, soft factors and their importance in default risk prediction have been studied (Dorfleitner et al. 2016; Iyer, Khwaja, Luttmer & Shue 2016) as well as rational herding and its positive association with loan performance (Zhang & Liu 2012). The data used in these studies is often from one single platform, such as the US platforms Lending Club or Prosper, since they have a relatively long credit history and a large sample. Additionally, no other platforms have their loan books as publicly available as Lending Club and Prosper have.

There are also a few studies about the comparison of lending platforms practices. For instance, auction model in pricing has been studied (Chen, Ghosh & Lambert 2014). Liu, Qiao, Wang and Li (2019) studied platforms' optimal risk control ability in their recent paper and according to them, proper pricing of loans is a key differentiator of lending platforms. Moreover, Mild, Waitz and Wöckl (2015) argued that a proper risk assessment is the most important task and that investors are unable to set adequate interest rates for borrowers.

Roig Hernando (2016) is one of the only researchers who studied lending-based crowdfunding from portfolio optimization perspective and concludes, that its risk-return combination for both retail and institutional investors is attractive. However, no studies have been made from the investor's point of view in comparing platforms' risks and returns between each other. Most of the studies focus on the loans in one single platform or a default risk of single loans. The fact is, however, that investors usually invest through auto-investment tools rather than selecting loans one-by-one from the platform, especially in consumer lending. Investors lack expertise to model default risk, and selecting loans one-by-one would be time-consuming and inefficient. Therefore, investors in lending-based crowdfunding should be more interested in risks and returns on a platform-level, rather than a loan-level, and the current literature is unable to fill this gap.

Perhaps the biggest problem causing the lack of such literature is the availability and comparability of data. Firstly, the loan books of lending platforms are not the same. Returns, arrears and default rates are reported differently, which means that they are difficult to compare. Second, many lending platforms don't provide loan books for

investors or researchers, nor a precise structure of their credit assessment process. That information is usually highly confidential and is the key competitive differentiator of a platform, so it is understandable for platforms not to open their processes too much. However, the does make the comparison of platforms almost impossible. Third, the world of lending platforms is very diverse, which makes it difficult to evaluate risk-adjusted returns and to make conclusions about the best practices.

The paper proceeds as follows. The first chapter is an introductory chapter while the second chapter consists of a theoretical framework of crowdfunding. In the third chapter, crowdlending platforms are introduced and information about various platforms' credit scoring process will be discussed. In the fourth chapter, the risks in crowdlending and how to mitigate them will be outlined, which will also serve as an introductory chapter for the empirical study. The fifth chapter will present the data and methodology, after which, the sixth chapter will present the findings of this study. The seventh and final chapter will discuss the challenges that investors are facing in crowdlending market then our findings will be summarised in the conclusion.

2 CROWDFUNDING

Crowdfunding is a relatively new and rapidly growing method of delivering capital into the economy without the standard financial intermediaries from individuals or companies who have surplus capital to other individuals or companies seeking investment. Previously, banks and other financial intermediaries have been in between the process, taking deposits from surplus companies and households and lending money to deficit companies and households. In crowdfunding, the funds are invested directly from the funders to the fundraisers, without traditional financial intermediaries. Fundraising is usually done online on a platform, which connects fundraisers and funders. Parties involved in crowdfunding can be classified into three groups: capital seekers, capital providers and intermediaries (Moritz & Block 2016).

The roots of crowdfunding platforms trace back to 2003 when *Artistshare* was founded in the US. It was a reward-based crowdfunding platform where fans of an artists could finance studio recordings or event tours. Fans were then given a ticket on the tour as a return on their investment. Later in 2005, the world's first P2P lending platform *Zopa* was launched in the UK connecting capital seeking consumers and funders. Since then, the crowdfunding market and especially the crowdlending market has grown rapidly creating a totally new market for borrowers, investors as well as platform operators.

2.1 The Definition of Crowdfunding

The term "crowdfunding" comes originally from the term "crowdsourcing". Crowdsourcing means that a company outsources a certain task to a large, external undefined group of people to get ideas, solutions and feedback, for example, from a new product or for developing corporate activities (Bayus 2013, Belleflamme et al. 2014, Howe 2008, Kleemann et al. 2008). This group of people are usually called the "crowd" and consists of nonexperts, typically consumers (Bayus 2013).

Belleflamme et al. (2014, p. 588) defines crowdfunding as …*"an open call, mostly through the Internet, for the provision of financial resources either in the form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes".* This definition is however, not extensive, since

lending-based crowdfunding, or crowdlending, is also labelled as crowdfunding and this definition excludes lending (Mollick 2014). Mollick provides another, slightly broader definition: *"Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries."*(Mollick 2014, p. 2). Further, Cai (2018, p. 9) combines two definitions and states: *"Crowdfunding is an open call to provide financial resources (Schwienbacher & Larralde 2012), which mostly takes place on Internet-based crowdfunding platforms without standard financial intermediaries (Mollick 2014)."*

A key feature of crowdfunding is that funding comes from a large number of capital providers, i.e. from the crowd. Rather than an institutional investor, a bank, a business angel or another sophisticated investor providing a large amount of capital, funding is raised from a large number of individuals whose single contributions are relatively small. In addition to the crowd, the internet and technology play important roles in crowdfunding. Intermediaries in crowdfunding, usually called crowdfunding platforms or websites, connects fundraisers and funders and provide the means. Platforms are intermediaries and they offer a standardized process to the both parties acting also as a portal for information, communication and execution (Moritz & Block 2016).

2.2 Forms of Crowdfunding

Crowdfunding is still relatively new and an evolving phenomenon and is continuously innovating. Because of its diversity, crowdfunding is often divided into different categories regarding the incentives and the return type of the funding. Belleflamme et al. (2015) divide crowdfunding platforms in two broad classes, which are (i) investment-based platforms and (ii) reward- and donation-based platforms. The classification works also well in crowdfunding in general.

In investment-based crowdfunding, capital providers make an investment and expect monetary benefits, for example shares of the funded company or interest return for the invested capital. The investment can be equity-based, royalty-based or lending-based.

In reward- or donation-based crowdfunding, funders are not expecting monetary benefits. Instead, the funders provide capital in order to support good cause or to get a product. (Belleflamme et al. 2015).

The other widely used categorization is De Buysere, Gajda, Kleverlaan, Marom and Klaes' (2012) model, where crowdfunding is divided into four categories: donation, reward, lending and equity. This classification separates equity- and lending-based crowdfunding, which is essential considering on their significantly different nature. Further, CCAF which publishes extensive reports yearly about the world's crowdfunding market, uses more precise models. CCAF divides different models of crowdfunding in 14 categories based on the borrower, use of funds, return type and investment style (see Table 1).

Table 1. Crowdfunding categorized by model (Ziegler et al. 2018b, p. 24)

Model	Definition
Marketplace / P2P Consumer Lending	Individuals or institutional funders provide a loan to a consumer borrower.
Balance Sheet Consumer Lending	The platform entity provides a loan directly to a consumer borrower.
Marketplace/P2P Business Lending	Individuals or institutional funders provide a loan to a business borrower.
Balance Sheet Business Lending	The platform entity provides a loan directly to a business borrower.
Marketplace/P2P Property Lending	Individuals or institutional funders provide a loan secured against a property to a consumer or business borrower.
Real Estate Crowdfunding	Individuals or institutional funders provide equity or subordinated-debt financing for real estate.
Equity-based Crowdfunding	Individuals or institutional funders purchase equity issued by a company.
Balance Sheet Property Lending	The platform entity provides a loan secured against a property directly to a consumer or business borrower.
Invoice Trading	Individuals or institutional funders purchase invoices or receivable notes from a business at a discount.
Revenue Sharing/Profit Sharing Crowdfunding	Individuals or institutions purchase securities from a company, such as shares or bonds, and share in the profits or royalties of the business.
Debt-based Securities	Individuals or institutional funders purchase debt-based securities, typically a bond or debenture at a fixed interest rate.
Mini-bonds	Individuals or institutions purchase securities from companies in the form of an unsecured retail bonds.
Reward-based Crowdfunding	Backers provide funding to individuals, projects or companies in exchange for non-monetary rewards or products.
Donation-based Crowdfunding	Donors provide funding to individuals, projects or companies based on philanthropic or civic motivations with no expectation of monetary or material return.

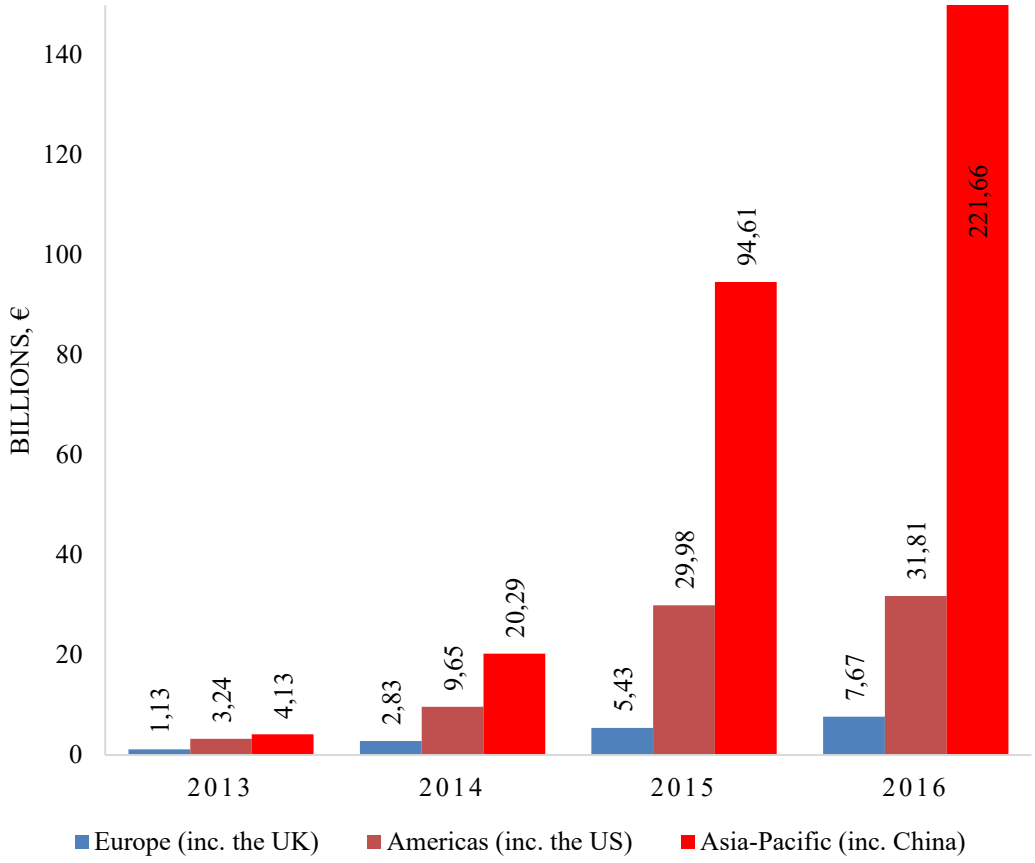
Crowdfunding enables individual investors to invest in asset classes such as private equity, private debt and consumer loans. Previously, those asset classes have not been easily accessible with a small investment portfolio. For investors, lending-based crowdfunding has actually created a totally new alternative financial investment instrument (Cai 2018). It has also been named as a new alternative asset class, since crowdlending can offer intriguing returns and portfolio diversification not only for individual investors but also for professional investors. For example, Roig Hernando (2016) studied the risks and returns of the loans on a Spanish business lending platform, *Arboribus,* and concluded that loan-based crowdfunding provides a competitive risk-return combination for both institutional and retail investors.

2.3 The Crowdfunding Market

Crowdfunding volumes have increased and continue to increase rapidly across the world. As Figure 1 shows, the Asia-Pacific region dominates the market by volume totaling €221.66 billion in 2016, leaving the Americas and Europe behind, totaling €31.81 billion and €7.67 billion, respectively. China, the US and the UK dominate the volumes inside regions, as China covers 99% of the volume in the Asia-Pacific, the US 98% in the Americas and the UK 73% of the European online alternative finance market in 2016. (Ziegler et al. 2018c). Further, compounded annual growth rate between years 2013 and 2016 have been very high in these three regions, being 277%, 144% and 89%, respectively. The growth, however, has started to slow down from triple-digit to double-digit rates, especially in the most mature markets in the US and the UK.

When comparing the volumes of the different types of crowdfunding, lending-based models accounts the major part of the total market. From Table 2, it can be seen that debt- and lending-based online alternatives cover over 90% of all online alternative finance in the Asia-Pacific, the Americas and the UK, and 78% in rest of the Europe. Instead, equity- and reward-based crowdfunding account for only a small part of the total volumes. Moreover, consumer lending is the biggest model in Asia-Pacific and Americas totalling 66.6% and 68.1% of the total crowdfunding volumes, respectively. In Europe, the proportion of consumer lending is significantly lower, being only 22.6% in the UK and 34.6% in the rest of the Europe.

Figure 1. Crowdfunding volumes worldwide (Modified, Ziegler et al. 2018c, p. 22).



Institutional investors have also recently begun to notice crowdfunding, which has led to an increase of the level of institutionalization in recent years. The proportion of institutional investments are the highest in P2P consumer lending, being as high as 92% in the US and around 40% in Europe, which is shown in Table 2. These results indicate that institutional investors cover the major share of investments in crowdfunding, and in fact, the proportion has been growing year-on-year in every market. Consequently, institutionalization is one of the main drivers in terms of the whole crowdfunding market growth and most likely, professional investors will continue to raise allocations into this asset class also thereafter.

Table 2. Selected statistics of online alternative finance in 2017 (B. Zhang et al. 2018; Ziegler et al. 2018a; Ziegler et al. 2018b; Ziegler et al. 2018c).

Region	**Asia-Pacific**	**Americas**	**the UK**	**Rest of Europe***
Proportion of debt- and lending-based crowdfunding of total funding	99.6%	97.6%	92.6%	78.2%
Proportion of consumer lending of total funding	66.6%	68.1%	22.6%	34.6%
Region		**the US**	**the UK**	**Rest of Europe***
Proportion of institutionalization of total funding				
Consumer lending		92%	39%	45%
Business lending		75%	40%	29%
Property lending		80%	34%	45%
Invoice trading		-	55%	68%
Equity-based crowdfunding		21%	49%	13%

*2016 data

2.4 Crowdfunding Platform Dynamics

The crowdfunding platforms' role in the crowdfunding ecosystem is crucial. Platforms act as market makers in a two-sided market and they serve both capital-seeking and capital-giving agents (Haas et al. 2014). Platforms not only provide the technology backbone linking funders and fundraisers, but also take care of the legal requirements and deal's structure (Beaulieu, Sarker & Sarker 2015). This relatively new and rapidly growing market opportunity has attracted a lot of operators in the market. For example, CCAF collected the data for their 2017 industry reports from Asia-Pacific and Americas from 1003 and 234 crowdfunding platforms, respectively (Ziegler et al. 2018a, Ziegler et al. 2018b). In Europe, 267 platforms were included in the European industry report in 2016 (Ziegler et al. 2018c).

The group of platforms is heterogeneous and business models vary. Belleflamme et al. (2015) studied crowdfunding platforms' business models and divided them to (i) investment-based platforms and (ii) reward- and donation-based platforms. Usually, platforms gain revenue by charging a provision from the borrower based on the amount of raised funding (Kallio & Vuola 2018, p. 72). Moreover, Belleflamme et al. (2015)

introduces three revenue sources. The first source of revenue is from the interest return that platforms get, when funders have provided funding for a certain campaign but the funding round has not yet closed, which accumulates interest return for platforms. Second, a platform may sell add-on services, e.g. campaign marketing on behalf of the fundraiser. Lastly, platforms usually charge a transaction or handling fee, which is based on the amount of raised capital. (Belleflamme et al. 2015). The latter source of revenue is the most common and vital source of revenue for platforms. Additionally, platforms may charge management fees from investors based on the amount of invested capital.

In this paper, the focus is on crowdlending platforms and the evaluation of them from investors' perspective. The dynamics, tasks and risks of lending-based platforms will be discussed more in the next chapter.

3 CROWDLENDING PLATFORMS

The focus of this study will now turn to lending-based crowdfunding, or crowdlending, and lending platforms. Crowdlending is a form of crowdfunding, where investors, or lenders, fund a consumer or a company and get interest return for the capital invested. The main incentive for investors is to receive monetary benefits and this will be the scope of this study. Since the crowdlending market is relatively diverse and still evolving, a short introduction and case examples of different lending platforms is essential. Types of lending platforms as well as the relevant risks for investors, what are affecting them and how to reduce them, will be discussed in this chapter.

3.1 Types of Crowdlending

Crowdlending can be divided in two broad categories by the borrower: business lending and consumer lending. Under this classification, business lending comprises of a variety of different types of financing products including secured and unsecured loans, property loans as well as short-term invoice trading. Risk profiles are generally very diverse and that should be taken into account when investors are considering risk-adjusted returns that different loan categories and different platforms offer. In consumer lending, investors provide loans to consumers e.g. to buy a car, to renovate a house or to consolidate loans. Consumer loans are usually unsecured.

Apart from dividing lending by the borrower, lending platforms can also be divided into traditional P2P lending platforms and marketplace platforms. On traditional platforms, investors invest directly with borrower's loans and the debt obligations are made between every single investor and the borrower. In marketplace lending, the investors actually lend money to a credit institution, called a loan originator that has issued a loan and has it on its balance sheet. Usually, in marketplace lending, the investor purchases claim rights from a loan originator to a certain borrower's loan payments which entitles the investor to get debt down payments and interest payments even if the originator goes bust. However, the borrower is officially the credit institution itself, which exposes investors to a relatively different risk position than in traditional P2P lending. Often, credit institutions offer a 100% buyback guarantee if the actual borrower defaults, which on the other hand, also secures investors position.

Marketplace lending has been growing a lot in recent years. Most of the platforms are based in the Baltic countries, as there currently exists little regulation in these countries. For investors, it's crucial to understand the risks related to the loan originator and what will happen if the originator defaults, even though the investors would have bought claim rights to another loan. Due to the fact that European crowdlending market is very diverse across Europe, the following section outlines a number of different case-studies from different European platforms.

Case-study example: P2P Consumer and Business Lending, Fellow Finance

Fellow Finance is a Finland-based lending platform being the biggest lending platform in Nordic countries. The platform's product offering includes consumer loans, small business loans and invoice trading. In the beginning of 2019, borrowers on the platform were from Finland, Sweden, Denmark, Germany and Poland. Fellow Finance performs a credit assessment on every applicant and if they pass, the loan is rated, and the funding round is then opened on the platform. The interest rate is set in an auction process between investors. The investor invests directly in the loan of the borrower and the debt agreement is made between every single lender and the borrower.[1]

Case-study example: P2P Marketplace Lending, Mintos

Mintos is a Latvian-based P2P Marketplace platform for consumer loans and small business loans. Instead of performing a credit assessment process on every single loan and issuing loans itself, Mintos creates a marketplace for different loan originators and retail investors. First, actual borrowers apply for a loan from a loan originator, and the originator performs the credit scoring of the applicant. Second, if the loan is issued, the originator keeps the loan on its own balance sheet and list the loan in the Mintos marketplace, where investors can invest in it. There are two types of structures in investments with Mintos. In the direct structure, investors are buying claim rights against the borrower, while in the indirect structure, direct claim is against the loan originator. Mintos performs due diligence for each loan originator, rates them and

[1] www.fellowfinance.fi

maintains statistics about the loans at originator-level. In March 2019, Mintos had 60 loan originators from 29 different countries.[2]

Case-study example: P2P Property Lending, Crowdproperty

Crowdproperty is a lending platform based in the UK and is focused on short-term property loans for small and medium-sized enterprises (SME). The platform is specialized in funding property development projects such as refurbishment finance or bridging finance. The platform performs due diligence for each project applying funding and if it meets the requirements, the loan is issued on the platform. All the loans are asset-backed against the property.[3]

It is apparent from our case-studies that investor's risk exposure varies a lot between different types of crowdlending. For example, both Fellow Finance and Mintos have consumer loans and SME loans on their platform, but in Mintos the investor actually lends the funds to the loan originator, not to the borrower. Therefore, the counterparty risk in marketplace lending is very different, especially in the indirect structure of the investment. Further, the risk exposure in business loans varies, as can be seen when comparing property lending and P2P Business Lending. In property or real estate lending, the loans are asset-backed with the property for which the loan is raised, whereas small business loans are usually not asset-backed. Risks concerning on crowdlending in general will be discussed later in this chapter.

3.2 Crowdlending in Europe

The UK is the forerunner in European crowdlending market having the largest volumes and most advanced regulation. In 2016, the UK represented 73% of the total €7.6 billion crowdfunding volume in the Europe, following France, Germany, Netherlands

[2] www.mintos.com
[3] www.crowdproperty.com

and Finland when comparing the countries by volume. As shown in Table 2, almost 90% of the total volume in Europe is lending- or debt-based crowdfunding.

Table 3. Crowdfunding volumes by model in Europe (B. Zhang et al. 2018, Ziegler et al. 2018c).

Model	Rest of Europe, 2016	the UK, 2017
P2P Consumer Lending	33.8%	22.7%
P2P Business Lending	17.0%	32.9%
Invoice Trading	12.2%	12.7%
P2P Property Lending	4.6%	19.7%
Real Estate Crowdfunding	5.3%	3.4%
Equity-based Crowdfunding	10.6%	5.4%
Reward-based Crowdfunding	9.2%	0.7%
Other	7.3%	2.5%
Total Volume	**€2.1 billion**	**€7.06 billion**

Table 3 displays that P2P consumer lending and P2P business lending covers over half of the total online alternative finance volumes. In Europe excl. the UK, consumer lending has the biggest share with a 33.8% stake, whereas in the UK, P2P business lending dominates with the share of 32.9%. Interestingly, property lending is a much more widely used form of crowdfunding than in rest of the Europe, with the shares being 19.7% and 4.6%, respectively. Invoice trading has almost equal proportions in both regions. Further, equity-based and reward-based crowdfunding have significantly larger shares in rest of Europe than in the UK.

Table 4. Proportion of institutionalization in Europe by model (B. Zhang et al. 2018; Ziegler et al. 2018c).

Proportion of Institutionalization by model	Rest of Europe		the UK		
Year	**2015**	**2016**	**2015**	**2016**	**2017**
P2P Consumer Lending	26 %	45 %	32 %	32 %	39 %
P2P Business Lending	24 %	29 %	26 %	28 %	40 %
Invoice Trading	37 %	68 %	-	-	55 %
P2P Property Lending	-	45 %	25 %	25 %	34 %
Real Estate Crowdfunding	-	26 %	-	-	33 %
Equity-based Crowdfunding	8 %	13 %	8 %	25 %	49 %

Due to the fact that lending-based crowdfunding has offered attractive returns over recent years, many professional investors have started to invest through lending

platforms. Especially in the current environment of low interest rates, professional investors are seeking alternative investments. As can be seen in Table 4, the share of professional investors is continuously growing in Europe, which drives the growth of the whole market and underlines the fact that professional investors find the market extremely attractive. For instance, Ziegler et al. (2018c) report that the proportion of institutional investments in P2P Consumer Lending grew rapidly from 26% to 45% between 2015 and 2016 in Europe, excluding the UK. In the UK, the institutional-led investments' proportion in 2017 was slightly less, totalling 39% but the share has been growing (B. Zhang et al. 2018). In business lending, the shares are also growing, being already at 40% level in the UK in 2017. The largest shares of institutionalization are in property lending and invoice trading.

At the moment, the UK dominates the European online alternative finance market having the oldest and largest crowdlending market with the most advanced regulation. The growth of the UK market, however, has been decreasing in recent years being in 2016 and 2017 43% and 35%, respectively (B. Zhang et al. 2018). The rest of Europe is growing faster, at 101% in 2016, and the growth will likely continue into the near future in comparison with the UK.

3.3 Platform's Credit Scoring Process

Lending platform's role in the whole crowdlending ecosystem is crucial. Usually platforms acts as a trusted intermediary who (i) collects funds from lenders and transfers them to borrowers and (ii) takes care that the debt down payments and interest payments from borrowers to lenders are paid on time (Kallio & Vuola 2018, p. 72). Moreover, platforms offers standardized process to both parties acting also as a portal for information and communication as well as taking care of the legal requirements and deal's structure (Beaulieu et al. 2015, Moritz & Block 2016).

From an investor's point of view, however, possibly the most important task for lending platforms is to select good-quality borrowers on the platform. Usually, a prospective borrower can't just open a financing round on a platform, but she first has to pass the platform's credit assessment process. The platform screens the loan applications and disqualifies applications which don't meet platform's lending

requirements. The platform evaluates the creditworthiness of the borrower, meaning the ability and the willingness to repay the loan and decides if the applicant may open a funding round on the platform (Kallio & Vuola 2018, p. 73). If the borrower meets the requirements, the loan is rated and opened on the platform. This assessment process is also called "due diligence" or "credit scoring".

Liu et al. (2019) studied lending platforms' risk control ability and argue that it has become the key differentiator between lending platforms. By risk control ability is meant the ability of the platforms to classify loans into different risk buckets according to their creditworthiness and hence the ability to predict loan defaults. The ability to classify loans accurately helps platforms to manage credit risk better, since the interest rate moves hand-in-hand with the riskiness of the loan. (Liu et al. 2019). The higher the risk associated to the loan, the higher interest rate the borrower must pay. Mild et al. (2015) studied loan pricing in peer-to-peer lending platforms and argued, that the pricing of credit risk is the main challenge for lenders and platforms. Further, they state that adequate pricing of credit risk is "… *a prerequisite for the long-term survival of this financial vehicle."*(Mild et al. 2015, p. 1297). Further, according to Ziegler et al. (2018c), the platform's own due-diligence process, credit scoring and management are crucial to the success of the platform.

Every platform has their own credit assessment process, which is usually highly classified information. The platform may differentiate itself with high-quality due-diligence process from other platforms and are therefore not very transparent with their procedures. However, usually the credit scoring relies on the assessment of multiple financial factors added by the analysis of soft information such as management experience. Typically, financial factors in consumer lending include credit rating from external rating agencies, debt-to-income ratio, house-ownership status and other detailed information about the borrower's monthly income and expenses (Bachmann et al. 2011). In business lending, financial factors are often related to liquidity, profitability and solvency. Further, when dealing with secured loans such as property loans, a proper assessment of the underlying security is crucial (Ziegler et al. 2018c).

Many academic studies focus on finding the determinants of a defaulter in P2P consumer lending. Polena and Regner (2018) find that annual income, debt-to-income

ratio, inquiries in past 6 months and certain loan purposes such as credit card and small business are statistically significant factors to determine consumer loan defaults. Further, Serrano-Cinca and Gutiérrez-Nieto (2016) find that loan purpose, annual income, current housing situation, credit history and borrower indebtedness also act as explanatory factors for default. Emekter et al. (2015) show from LendingClub data that credit grade, debt-to-income ratio, FICO score and revolving line utilization are determinants for loan default, but interestingly they find, that higher interest rates don't compensate the higher risk that investors are exposed when investing in high-risk loans.

There is also a substantial amount of default prediction studies for businesses and naturally, financial ratios play the most important role. After Altman (1968) introduced the groundbreaking Z-score, many researcher have enhanced and developed complementary models for predicting corporate defaults. Usually, the models measure corporate's profitability, liquidity and solvency. One of the oldest and largest P2P business lending platform's in the world, Funding Circle (2018), states in its initial public offering registration document, that its credit scoring process is a combination of automated work and human judgement. Funding Circle, based in the UK, uses algorithmic models to categorize loans into risk buckets and to price the loans according their risk levels. The main variables in the assessment process consists of multiple financial ratios, scores from credit bureaus, company and directors' credit history and bank account information. The data is collected from the borrower as well as from third parties, e.g. credit bureau providers. The performance of the pricing model is continuously monitored, components validated and the model enhanced. (Funding Circle 2018).

If a platform's credit scoring process has a significant influence on investor's returns, then so does debt collection and recoveries management. By debt collection, what is meant is the management and collecting of late payments, whereas a loan recovery means that a loan which has once defaulted recovers and will paid back at some time period. Depending on the platform, debt collection and recoveries are organized by the platform itself or by a third party. Funding Circle manages both processes mostly by itself, having its own team for both processes and monitors late and defaulted loans on a daily basis. The UK-based platform states that they have a high historical recovery

rate, being as high as 49% in the UK loans. (Funding Circle 2018). The Finnish crowdlending platform, Fellow Finance, also takes care of managing late payments, but after a couple of payment requests, the loans are expired and sold to a third-party debt collector. Therefore, credit risk associated to loans is limited. In March 2019, the selling prices were at 53% and 30% of the face value of the loans in Finland and Poland, respectively.

The importance of the quality of a platform's credit scoring process, or risk control ability, for investors is huge, since most of the investments in crowdlending market are made by using the platforms' auto-invest tool. It means, that investors are not analyzing and selecting loans one-by-one, but the investments are done automatically with the platform's tool. In particular, an investor pre-selects investment amounts, risk appetites and the duration of the loans, and afterwards the platform efficiently diversifies funds according to investor's preferences automatically (Ziegler et al. 2018c). For example, in 2016, in Europe (excluding the UK), 77% of all investments in P2P consumer loans was done with an auto-invest tool (Ziegler et al. 2018c). In the UK and in the US, the proportion of auto-selection in consumer loans is even greater, totalling 99% (B. Zhang et al. 2018, Ziegler et al. 2017). In P2P business loans the auto-bids covers also 99% in the UK in 2017 but only 49% in rest of Europe in 2016, whereas in invoice trading proportions are around 70 percent and property and real estate lending less than a half (B. Zhang et al. 2018, Ziegler et al. 2018c).

High proportions of investments by auto-selection emphasize the fact that the platform's credit scoring process and borrower selection is extremely crucial from an investor's perspective. Platforms are in control in pricing the risks correctly, and the ability to price the loans properly will directly affect the investor's returns. However, digging into platforms credit scoring processes and comparing them with each other is not easy, since platforms are not willing to open up the assessment process and pricing too much.

In addition to credit risk, investors face a plenty of other risks related to platforms and lending in general. These risks will be discussed in the next chapter.

4 RISKS IN CROWDLENDING

From an investor's point of view, while crowdlending or peer-to-peer lending provides attractive returns, it is not without risk. It's crucial to understand the risks related to loans and platforms when comparing platforms and returns that they offer between each other. Investors are also able to diminish the risks by performing sufficient background checks for platforms.

Kallio and Vuola (2018, p. 66) list default risk, platform risk, information risk, fraud risk, liquidity risk, systemic risk and information security risk as potential risks that investors should be aware of with crowdfunding. This list could be supplemented at least with interest rate risk and regulatory risk. Investors are able to diminish many of these risks by choosing good-quality lending platforms, since the platform has the control of the lending process in general.

4.1 Credit Risk

Credit risk or default risk is naturally a lender's key risk in crowdlending. Credit risk means that the investor's capital is at risk, and that the investor may not get the invested capital or planned interest payments back from the borrower. There might also be delays in the repayment program and the profit may be lower than expected. Platforms can manage default risk with a high-class risk policies and with a large portfolio diversification (Roig Hernando 2016).

In addition to the accurate loan classification ability that was discussed previously, credit risk can be mitigated by multiple other actions. First, loans might be asset-backed by a property, a loan originator or a sales invoice. Second, some platforms have arranged agreements to sell the loans at a discount to a third-party debt collector. For example, Fellow Finance sells defaulted Finnish loans at a 53% price of the face value to a third party, which limits the lender's credit risk. Third, platforms might have a compensation fund, or a provision fund, to protect investors from poorly performing

loans. For example, P2P Lending platform Ratesetter provides a provision fund for investors, which covers investors' defaulted outstanding capital.[4]

When taking into account that platforms usually get their earnings based on the amount of raised funding, it places platforms in a morally hazardous position (Kallio & Vuola 2018, p. 72). Theoretically, the platform might prop up their own financials temporarily by allowing bad-quality borrowers to raise funds on a platform (Kallio & Vuola 2018, p. 74). Naturally, it might have a negative influence on an investor's returns, if the amount of defaulted loans increases. This risk can be reduced if the platform itself invests also in the loans on the platform. If the platform's own capital is also exposed to the loan performance, the possibility to take bad-quality borrowers on the platform in order to grow revenue is less attractive. The proportion of the platform's own investments to the loans, also called skin-in-the-game, is a good measurement when evaluating the platforms own risk on the loans on the platform. Alternatively, platforms could have a business model where a platform's revenue streams would be more performance-related, rather than transaction-based.

4.2 Platform Risk

Kallio and Vuola (2018, p. 66) defines *platform risk* as a risk, that the platform would be shut down temporarily or that it defaults permanently. This risk is especially relevant when considering lending platforms, since the platform usually takes care of the payment traffic between the borrowers and lenders. According to Kallio and Vuola (2018, p. 67), platforms can mitigate the risk that lenders are facing by keeping customers' accounts separated from the platforms assets or outsourcing the whole payment traffic to a third party.

A question that an investor should pose to the platform they are investing in is, "what happens to the loans and payment traffic, if the platform defaults?" Usually, investors have hundreds or thousands of loans in their portfolio, which means that the governance of the loans would be extremely complex without an intermediary. Many

[4] https://www.ratesetter.com/invest/investing-with-us/provision-fund

platforms have agreements with third parties, which would take care of the payments from borrowers to lenders if the platforms stops operating. For example, Funding Circle says in its stock exchange registration document, that it has arranged back-up plans in case of platform's shut down, which means that a third-party would take care of servicing obligations (Funding Circle 2018).

Furthermore, platform risk may be smaller if the company is regulated by an official authority, which usually enhances investor protection. Many of the more mature crowdlending markets have their own regulatory body or a jurisdiction for crowdfunding, but especially in newer local lending markets where crowdlending is still a relatively new trend there might not be any regulation or supervision for platforms. If no regulations or supervision apply or in addition to that, platforms might have other memberships in self-regulatory bodies or other certificates of good conduct. For example, in the UK Peer-to-Peer Finance Association is a self-regulatory body for peer-to-peer lending platforms, where the members are required to follow association's rules regarding for instance, transparency and good conduct.[5]

4.3 Information Risk

Information risk means the asymmetric information between the borrower and the lender or the platform. Bachmann et al. (2011) names asymmetric information as a fundamental problem of crowdlending, since the borrower always has better knowledge of his ability and willingness to repay the loan. When compared with initial public offerings or other more regulated and transparent forms of financing, the information risk in crowdfunding is higher. Usually, part of the borrower's information is self-reported and part from third-party sources such as credit bureaus.

One consequence of the realization of this risk is that it may lead to subprime borrowers passing the credit assessment process and ending up to investor's portfolio. (Kallio & Vuola 2018, p. 67). The information offered by the borrowers is not necessarily credible or verified, which makes credit assessment more difficult for

[5] https://www.p2pfa.org.uk/

lenders and platforms (Liu et al. 2019). Data quality problem is also one of the key issues of lending platforms and both Fellow Finance and Funding Circle name it as a key risk of platform operations (Fellow Finance 2018, Funding Circle 2018). Moreover, funders can't control how the fundraiser actually uses the funds (Belleflamme et al. 2015). Platforms have an important role in reducing the risk of asymmetric information between lenders and borrowers. Generally speaking, the more detailed information the platform receives from the borrower, the lower the risk that asymmetric information may be.

4.4 Liquidity Risk

Liquidity risk in crowdlending means the risk that there is no secondary market for the loans which makes loans illiquid and not easily convertible into cash (Kallio & Vuola 2018, p.69). Platforms can mitigate this risk by organizing a secondary market for the loans, where investors can trade previously issued loans. However, not all platforms offer a secondary market for the loans in their marketplace. Additionally, the platforms who offer a secondary market usually charge investors for using it or lenders might have to send the loan at discount, which makes it costly. For example, Fellow Finance charges a 1% fee from the lender if the loan is sold at the secondary market.

If an asset is illiquid, investors usually demand an illiquidity premium for the asset. Basically, this means that the returns must be higher. When taking this to a lending platform environment, if there are two platforms and the other offers a secondary market for the loans and the other do not, investors should demand higher returns from the latter platform's loans, when all else is equal.

4.5 Regulatory Risk

Changes in the regulatory environment and laws may affect the crowdlending market. *Regulatory risk* is a relevant risk for European investors since the whole market is still relatively young, meaning that the regulation and laws are still under development. Regulatory changes usually improve investors' protection and enhance good practices within the market. However, there can also been unforeseen and negative consequences. For example, in 2018, the Finnish government (HE 230/2018 vp.)

suggested that the maximum interest rate for consumer loans should be set at 30% per annum. The Commerce Committee (TaVM 39/2018 vp.) sought to set the interest rate even lower, at 20%. This change would immediately have an influence on consumer lending platforms which offer loans at higher rate than 20% by cutting the amount of loans intermediated through the platform or, by cutting investors' returns by admitting high-risk loans at a lower rate of return.

The regulatory environment in Europe is diverse, since there exists not Europe-wide regulatory standard. Further, the increase in national-level regulation makes, however, a European-level regulation even less likely (European Crowdfunding Network 2017). Many countries, the UK and Finland for instance, have started to build their own laws and regulation. European Crowdfunding Network (2017) states in its report, that 11 EU countries have already implemented national-level regulation on crowdfunding. This creates divergence in the European lending market and the lack of internal European crowdfunding market and regulation restricts European investors to diversify their investments geographically across borders (European Crowdfunding Network 2017, Kallio & Vuola 2018, p. 364). Further, investors' risk exposure may differ significantly when investing in loans across Europe, as protection of investors varies largely from country to country. In the UK the regulator requires multiple actions from platforms for investor protection, such as capital adequacy requirements and arrangements in the event of platform failure. Whereas in Latvia, there also exists multiple marketplace platforms. These platforms, unlike their UK variants are not regulated or supervised by any financial authority and investors are therefore not protected from any wrong-doings or illegal activity. (European Crowdfunding Network 2017). Therefore, it is crucial that investors take into account where the platforms are based and what kind of regulation applies on them, in order to understand the risk related to the platform and its regulatory environment.

4.6 Other Risks

When asked what the greatest concerns from their perspective are, lending platforms name *systemic risk* and *fraud risk,* being an even greater risk than the increasing levels of defaults (Ziegler et al. 2018c). Systemic risk means the risk of contagion, wherein a certain issue in one large company spreads to the entire industry even causing

problems to other industries, financial markets and the economy in general. The risks for *fraud risk* and *information security risk* are high when operating online, which enables anonymity and exposes platforms for various crimes such as identity fraud, information security breaches and money laundering. (Kallio & Vuola 2018, p. 69).

Interest rate risk refers to the risk of fluctuating interest rates. While most of the loans in P2P lending industry are with fixed interest, the nominal interest returns do not fluctuate. However, when interest rates rise, the value of the investment may decrease, and investors would probably want to lend the same money to someone else with higher interest return. Furthermore, depending on the platform policies, borrowers might also be able to prepay loans earlier than expected, which means that future interest payments will not be paid. This is a relevant risk especially when rates are going down, because in that scenario, borrowers might be able to refinance the loan with a lower interest rate. Platforms can set a prepayment fee for the borrower and by doing this, investors would get a compensation to mitigate that risk.

For investors, it is paramount to have a proper understanding of risks related to lending-based crowdfunding and platforms. Some of the risks are external, such as systemic risk, and they will more or less always be there and the possibilities to mitigate them are limited for both investors and platforms. However, most risks can be managed, controlled and mitigated by the proper actions of platforms. As discussed earlier, if investors use an auto-invest tool for making investments, all that they should do is to dig in to platforms' processes and evaluate the quality of the processes when comparing the risks and returns of different platforms. Often, it will require an in-depth investor's due diligence for a platform, since many platforms are opaque.

Platform transparency solves many of the problems that investors are facing when evaluating the risks. Above all, transparency can be seen as a trust-building exercise. Many platforms provide statistics of the loan portfolio performance on their websites, but naturally, the credibility of the statistics is difficult to evaluate. In a best-case scenario, the performance of all loans issued by the platform, called a loan book, is easily accessible for investors for scrutiny, including their track record and realized rates, and then the evaluation and comparison of different platforms is much easier. However, only very few platforms actually give the access to their whole loan book.

Further, platforms' business model is crucial for investors to understand, how the platform itself is positioned in the market and what the platform's risk exposure is. A lack of transparency can also be seen in how platforms inform their business model, and it emphasizes the fact that it is highly recommended for investors to perform a holistic due diligence check on the platform before investing.

5 DATA AND METHODOLOGY

5.1 Data

The data in this study consists of two separate datasets: a questionnaire and hand-collected data. We sent email requests to 139 European crowdlending platforms which we found after investigating the European lending market. To the best of our knowledge, the group of platforms chosen covers most of the European crowdlending market. The study was made in cooperation with Investment Intelligence Oy. We informed the platforms of our willingness to perform a due diligence process to their platform and additionally asked them to participate in this market research. The request consisted of an online questionnaire sheet (Appendix 1) including 77 questions about platform size, regulation, transparency and credit assessment process.

The response ratio for the questionnaire was 13.6 %, totalling 19 answers. Since the study was made in cooperation with an investment company willing to invest in this asset class, we assumed that platforms would be more interested to answer since there was a clear business opportunity for them. However, the response ratio was lower than expected. Some platforms found our due diligence too heavy and were not keen to start the process. Furthermore, a couple of non-disclosure agreements (NDA) were signed with the platforms, and therefore, the results from the question pattern, will be kept anonymous.

Due to the lack of the questionnaire responses, we gathered additional data for the study by collecting and collating publicly available information from platforms' websites and other publicly available sources. This data includes information about 108 European lending platforms. There are significant differences in the transparency of platforms; some platforms provide a lot of publicly available information while others are much more secretive, providing a limited amount of information. Further, many of the platforms are locally based and do not provide information in English, meaning that the study does not cover all European countries well enough. Hand-collected data does give, however, a good overview of European crowdlending platforms, platform dynamics and their practices.

Additionally, we received fourteen loan books from the platforms. Some platforms provide access to their loan book on their websites and some sent them to us against NDA. However, the comparison of platform returns turned out to be too complex to analyse as to the fact that they are not easily comparable. Additionally, most of the platforms were not willing to share information about their credit scoring process nor their give their loan books for research purposes. Therefore, the return evaluation would have been limited to few platforms, which is not in our scope of interest, since there already exists multiple studies covering, for example, Lending Club's and Prosper's credit risk and returns. Therefore, I focus on the risks related to platforms in order to get a better understanding of the lending platforms in general, and leave the loan book evaluation out of the study.

5.2 Methodology

The research method is mostly qualitative, and the key objective is to evaluate and compare the key risks related to crowdlending outlined in Chapter 4. This study focuses especially on the evaluation of credit risk, platform risk, liquidity risk and regulatory risk. The variables created to evaluate these risks are based on the methods outlined in Chapter 4 and includes both numeric variables, dummy variables and open questions. The results are presented in Chapter 6 as well as the discussed between the two datasets and previous literature.

Due to the fact that lending platforms aren't willing to share confidential information about their credit scoring process, we were not able to make an in-depth analysis of it, although it is by far the most important single factor that investors should evaluate. Instead, the study gives an overview of the European lending platforms and helps investors to focus on the right factors when evaluating the risks related to platforms. Further, the study is ground-breaking by creating a framework for future researchers how to measure, compare and evaluate crowdlending platforms.

5.3 Limitations

The study is quite experimental in many ways and has had many challenges. Although the selection of the lending platform is the investor's most vital decision when

investing in consumer and SME loans, academic research have not covered this topic. Perhaps, due to the fact that the lending environment is diverse and the comparability of platforms is complex. The whole crowdlending market is still young and evolving and many platforms have a relatively short history. Further, risks and returns concerning different platforms and different kinds of loan types vary widely, making comparability difficult. Therefore, due to these limitations, this paper is unable to make any concrete conclusions about the lending market.

The biggest problem concerning this field of research is obviously the lack of reliable data as there exists no unified database to measure platform performance. The data of this study might also include various biases. Some respondents in the questionnaire seemed misinterpret certain questions and therefore some responses are not useful. The sample of 19 respondents is also relatively small. Additionally, respondents are diverse, comprising of consumer lenders, business lenders, property lenders and marketplace lenders, making comparability rather difficult. There might be errors in the hand-collected data too. For instance, if a platform hasn't disclosed certain information, e.g. does the platform have a secondary market, on its website, or we were unable to find the information. Therefore, the platform transparency plays an important role concerning on the reliability of the results. Further, we collected the data from only English-speaking platforms, which excluded at least 30 European lending platforms from the dataset. These issues might expose the results to certain biases.

6 EMPIRICAL STUDY AND RESULTS

6.1 Data Description

Table 5 displays the distribution of the answers to the questionnaire as seen by region and the loan types that the platforms offer. Most of the responses came from Baltic-based or Nordic-based platforms, as no responses from Eastern Europe or Southern Europe were received. 84% of platforms offer business loans. The young age of the whole crowdlending market can be seen from the average year of foundation, which is 2014. Over half of the respondents operate cross-border, since 10 out of 19 platforms offer loans from multiple countries. Issued single loans vary between €25 and €11,5 million, whereas loan maturities vary from one month to ten years, being 20 months on average.

Table 5. Distribution of the questionnaire respondents.

Questionnaire	Observations	Proportion
Total answers	19	
Region		
Baltic countries	7	37 %
Nordic countries	4	21 %
the UK & Ireland	4	21 %
Central Europe	4	21 %
Loan types		
Consumer loans	6	32 %
Business loans	16	84 %
Property loans	2	11 %
Invoice trading	2	11 %
Average year of foundation	2014	

In Table 6, the same results are presented from the hand-collected data. Geographically, the sample differs greatly compared with the questionnaire respondents as over half of the platforms are based in the UK or Ireland. The first lending platform in the world, *Zopa*, was founded in 2005 in the UK and the crowdlending market is the most mature in the UK, which may explain this. Further, Baltic countries play a relatively large role given the size of their economies, most

probably due to the lack of regulation which attracts certain kinds of platforms to the region. Southern and Eastern Europe are underrepresented also in this sample, which is due to the lack of English on their website and therefore, the incompatibility of these websites in our data sample. Further, the coverage of Central Europe is small, even though there exist dozens of platforms (Ziegler et al. 2018c). Lastly, this dataset shows that, on average, a European lending platform is founded in 2014.

Interestingly, 15 platforms are marketplace lenders connecting loan originators and investors, and 12 of them are based in Baltic countries. Most of those 12 platforms are based in Latvia, where no regulations apply for crowdfunding. The lack of regulation seems to be a main driver as to why claim rights trading platforms have founded the platforms in Latvia. According to European Crowdfunding Network's report (2017), Lithuania is the only Baltic country where specific regulation and supervision for lending platforms exists.

Table 6. Distribution of platforms in the hand-collected dataset.

Hand-collected dataset	**Observations**	**Proportion**
Sample	108	
Region		
Baltic countries	27	25 %
Nordic countries	8	7 %
the UK & Ireland	59	55 %
Central Europe	11	10 %
Southern Europe	2	2 %
Eastern Europe	1	1 %
Loan types		
Consumer loans	40	37 %
Business loans	56	52 %
Property loans	41	38 %
Marketplace lending platforms	15	14 %
Whereas in Baltic countries	12	
Average year of foundation	2014	

In Figure 2, respondents to the questionnaire are separated by their year of foundation and measured by the total amount of raised capital. As we can see, the data includes one platform founded in 2010, representing 74% of the total amount of raised capital

of the sample, which is €4.6 billion. Further, two platforms founded in 2018 having only raised €1 million funding together. Therefore, a conclusion can be made that the sample includes both platforms with a long track record as well as newly founded platforms.

Figure 2. Platforms by year founded and amount of capital raised, the questionnaire.

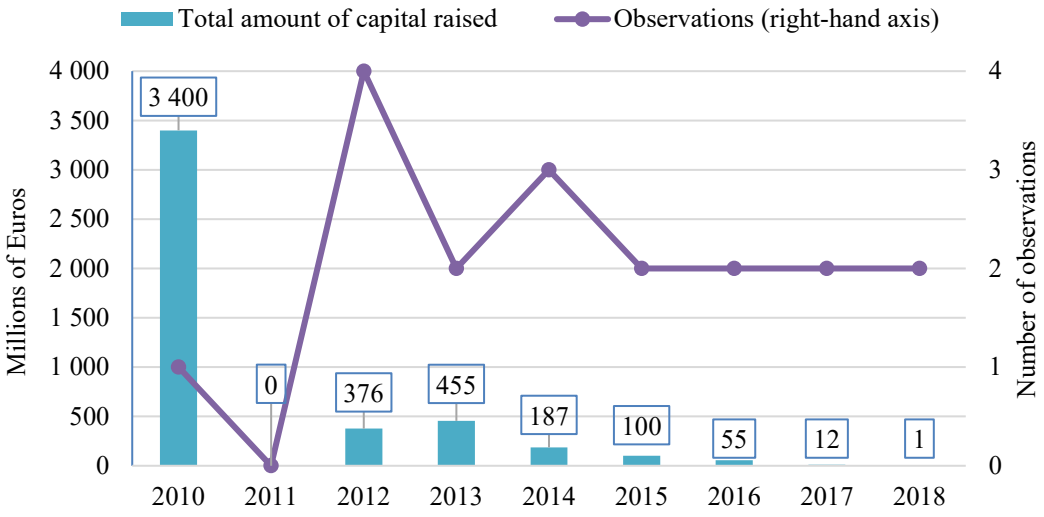


Table 7. Platforms by year founded and amount of raised capital, the hand-collected dataset.

Year	Observations	Amount raised, €
2005	1	2 321 865 000
2006	0	0
2007	0	0
2008	2	1 896 000 000
2009	1	455 656 233
2010	5	9 485 776 991
2011	3	5 219 515 030
2012	6	1 890 380 614
2013	12	1 727 047 145
2014	18	1 767 777 862
2015	12	2 953 678 336
2016	13	1 225 164 029
2017	4	54 328 987
2018	3	126 265 905
Total volume	**80**	**29 123 456 133**
On average		**364 043 202**

In Table 7, the hand-collected sample has been divided by the year of foundation. Only 80 platforms out of 108 disclosed the amount of raised capital on their websites. As Table 7 shows, most of the platforms were founded in 2013 or later. When monitoring the cumulative amount of capital raised, 49% of the total amount has been raised by platforms founded in 2010 or sooner, which contains only 9 platforms.

6.2 Credit Risk Evaluation

Investors' biggest risk regarding crowdlending is credit risk. Platforms have a crucial role in controlling credit risk and can be mitigated by a proper borrower selection, proper pricing of loans and by using collaterals. Further, the higher the number of loans on the platform is, the easier investors are able to diversify their investment portfolios.

6.2.1 Credit Scoring Process

Credit scoring differs greatly between marketplace lenders where investors and loan originators trade loans, when compared with conventional P2P platforms which connect borrowers and lenders directly. For marketplace platforms the focus of due diligence is in the loan originator (LO), namely a credit agency who issues the loans. One marketplace lending platform responded, that the due diligence of a loan originator includes: *"..(1) LO Customer onboarding & scoring process (2) LO Debt collection procedure (3) LO Various numerical ratios (4) LO Organizational evaluation (5) LO Financial Documents (6) LO Current and possible covenants."* In marketplace lending, where an investor buys claim rights from the LO and directly gives the loan to a LO's balance sheet, a proper evaluation of the LO is needed. Further, another respondent stated that the platform evaluates the LO's financials, the LO's credit scoring process and current loan portfolio. What is also typical for marketplace lenders, neither of the respondents rate the single loans on their platforms, they rate only each LO selling claim rights on their platform. It is clear, that the investor's risk culminates to the risk related to loan originator rather than the end borrower, e.g. a consumer or a company, even though the investment is camouflaged to a consumer or business loan.

From the answers of six platforms offering consumer loans, we find that the credit scoring process usually includes dozens of factors. From Table 8, we see that every respondent has borrower's demographics, home ownership and employment status, credit history, net income, current delinquencies, number of inquiries and the outstanding debt checked. Further, five respondents check the purpose of the loan and the borrower's credit rating from credit bureau. The picture of the borrower as well as the written application seem to have smaller influence on the credit scoring.

Further, one consumer lending platform has outsourced the credit scoring process. For two platforms the evaluation process is fully automatic, whereas for four platforms it includes manual work. Only three of the six platforms categorize loans to risk classes according to the level of risk of the loans.

Table 8. Platforms' credit scoring process, the questionnaire.

Consumer loans			**Business loans**			
Observations	6		Observations		16	
	Yes	**No**		**Yes**	**No**	
Public credit rating	5	1	Public credit rating	12	4	75 %
Credit history	6	0	Credit history	12	4	75 %
Number of inquiries	6	0	Latest annual statement	14	2	88 %
Net income	6	0	Latest auditor's report	13	3	81 %
Outstanding debt	6	0	Latest bookkeeping reports	14	2	88 %
Monthly cash flow	6	0	Current delinquencies	13	3	81 %
Current delinquencies	6	0	Number of inquiries	11	5	69 %
Home ownership status	6	0	Outstanding debt	14	2	88 %
Employment status	6	0	Purpose of the loan	15	1	94 %
Written application	4	2	Financial forecasts	11	5	69 %
The purpose of the loan	5	1	Cash flow forecasts	11	5	69 %
Demographic details (age, gender etc.)	6	0	Ownership structure	14	2	88 %
The picture of the borrower	2	4				
Automatized credit scoring	2	4	Automatized credit scoring	2	14	13 %
Interview	1	5	Interview	13	3	81 %
Risk classification	3	3	Risk classification	11	5	69 %
	Yes	**No**		**Yes**	**Partly**	**No**
Scoring outsourced	1	5	Scoring outsourced	3	4	9

When investigating the credit scoring practices of the 16 platforms offering business loans, we see that 69% of respondents classify loans into five or more risk categories, as shown in Table 8. Only for two of the platforms is the credit scoring process totally automatized. Most of the platforms perform the credit scoring by themselves, whereas three platforms have outsourced, and four platforms partly outsourced the credit rating process.

When asking about the data sources used, both consumer and business loan providers answer that part of the data is gathered from the official sources such as credit bureau and part of the data is self-reported by the borrower. Marketplace lenders state, that loan originators takes care of the borrowers' credit evaluation process and therefore, most of the platforms do not perform credit assessment to a single loans provided on their platform. Instead, the platforms evaluate the loan originators, who then sell claim rights.

Those business lenders, who opened up their credit assessment process slightly more, said that their credit scoring models consists of dozens of factors. For example, to the question of how many variables are analyzed in the assessment process and which are the most important, one respondent answered: *"Over 30. Equity ratio is the most important. Mixture of quantitative and qualitative factors."* In general, the most important variables are financial factors such as capital structure, profitability and liquidity. Moreover, the credit scoring includes usually also the evaluation of qualitative factors such as management experience and ownership structure. If the loans are asset-backed, the platform also evaluates the collateral.

Table 9 shows that 53% of platforms in hand-collected sample declares that they use assets to back the loans partly or fully. Assets include mortgages, cars and personal or company guarantees. Further, 10% of platforms have a provision fund that covers a certain amount of defaulted loans. Additionally, a buyback-guarantee is in use in 21% of the platforms, being a rule of thumb to all 15 marketplace lenders in the sample who offer buyback-guarantees to secure investors' loan payments. What is meant by a buyback-guarantee is that if the loan defaults, the investor is able to sell the loan usually at full price to the loan originator or to a third-party. In Table 10, displaying the results from the questionnaire, we see that the proportions of platforms using asset-

backed loans, provision funds and buyback-guarantees are higher, 89%, 16% and 42%, respectively.

Table 9. Platform characteristics, the hand-collected dataset.

Platform factors	Yes	No	Proportion
Liquidity			
Secondary market	59	49	55 %
Credit risk control			
Asset-Backed loans	57	51	53 %
Provision fund	11	97	10 %
Buyback guarantee	23	85	21 %
Transparency			
Loan book availability	16	92	15 %
Statistics availability	57	51	53 %
Regulation			
Regulated/Supervised	85	23	79 %
Other			
Auto-invest tool	77	31	71 %

84% of the respondents say that they have set penalty rates for late payments, as we can see from Table 10. The rate varies between 2% and 18% depending on the platform. Additionally, 18 out of the 19 respondents say that they actively manage late payments and try to recover loans. Respondents have both in-house collection teams and outsourced partners. The definition of a default varies a lot according to the responses, since loans are counted as defaulted usually after a certain delay in repayment, varying between 45 and 120 days, depending on the platform policies. It means that after a loan is declared as defaulted, the loan goes to recovery, or is sold to a third-party or loan originator if a buyback-guarantee holds.

Diversification is crucial to mitigate the impact of the credit risk of a single loan to investor's whole loan portfolio. The more that platforms offer loans on their platform, the easier it is for investors to spread their investments across multiple loans. Usually, the number of loans is higher on consumer lending platforms, and the single loan amount on average is smaller than on business lending platforms. On marketplace lending platforms, the number of loan originators on the platform helps investors to manage the risk concerning on loan originators. In the hand-collected data, we found

15 marketplace lenders, and the variation of the number of originators on the platform was between one and 58. Instead of one platform having 58 loan originators, none of the platforms had over 20 loan originators on the platform. Three platforms report having only one loan originator.

Table 10. Platform characteristics, the questionnaire.

Platform factors	Yes	No	Proportion
Liquidity			
Secondary market	9	10	47 %
Fees for lenders	5	4	56 %
Credit risk control			
Asset-backed loans	17	2	89 %
Provision fund	3	16	16 %
Buyback guarantee	8	11	42 %
Penalty rate if delayed	16	3	84 %
Managing late payments actively	18	1	95 %
Transparency			
Loan book availability	10	9	53 %
Regulation			
Regulated/Supervised	13	6	68%
Platform risk			
Debt obligations directly	17	2	89 %
Investors' assets separated	18	1	95 %
The platform is profitable	8	11	42 %
Interest rate risk			
Fixed interest rates	17	2	89 %
Prepayment possibility	18	1	95 %
Penalty rate for prepayment*	3	13	19 %
Other			
Skin-in-the-game	5	14	26 %
Auto-invest tool	13	6	68 %
Institutional investors	15	4	79 %

*for two respondents, the existence of penalty rate for prepayment depend on the agreement

6.3 Platform Risk Evaluation

6.3.1 Transparency

One of the main attractions to the platforms from an investor's point of view is transparency. Since the crowdlending market is young and track records are short, it is

important for investors to get reliable information of the borrowers and platforms to build trust and to properly evaluate the riskiness of the loans. We measure transparency by the availability of loan books and statistics of the loan history.

Table 9 shows that only 15% of the platforms in hand-collected data offer loan books publicly available for investors on their websites. When asked the same question in the questionnaire, half of the respondents stated that the loan book is publicly available, but however, we were not able to upload all of content of their loan books. Some respondents sent the loan book to us after signing a mutual Non-Disclosure Agreement. Further, 53% of the platforms in the hand-collected data offer statistics about their loan performance on their website. Similarly, most of the respondents to the questionnaire stated that they report the portfolio performance to investors monthly or quarterly. However, the validity and creditworthiness of the statistics is extremely difficult to evaluate. Therefore, there is a significant lack of transparency in the crowdlending market considering the whole loan portfolio performance, especially for individual investors, who are not able to get the loan book on demand, as institutional investors most likely are, due to a larger business opportunity for a platform.

6.3.2 Skin-in-the-game and Platforms' Business Models

Only very few platforms invest in the loans offered on their platform. Five respondents out of 19, or 26%, have skin-in-the-game on the loans on their platform, as Table 10 shows. For those who have skin-in-the-game, the proportion of the total loan amount varies between 5% and 30%. Further, for marketplace lenders the loan originator usually has skin-in-the-game by keeping part of the loan on themselves, or at least by offering the buyback-guarantee for investors.

It is important to understand platforms' own risk exposure to the lending business in general. According to the survey, most of the platforms earn their income from transaction fees from the borrower, varying between 2 and 7 percent from the raised amount. Additionally, some platforms charge servicing fees from the borrowers during the loan period or takes part of the paid interest rate, varying between 0.5 and 2 percent. The major part of the revenue comes, however, instantly after the funding round and is based on the size of the transaction. Further, marketplace platforms earn a margin

from loan originators, varying between 1 and 4 percent, and they might also take other commission fees for managing the payments.

Platforms getting most of the revenue transaction-based and not during the loan period, might drive them to a morally hazardous position. The more loans intermediated through the platform, the more income the platform receives, no matter how the loans perform. Naturally, in a long-term that kind of behavior would not be sustainable in terms of the platform survival, but it would be better from investors' perspective if the platform also would get the revenue more performance-related during the loan period. In that way, the incentives for both investors and the platform would be mutual. Platforms investing in the loans is one way but not the only way. For example, platforms could change their revenue model towards performance-related commissions.

6.3.3 Supervision and Regulation

We can see from Table 10 that 68%, or 13 out of 19 respondents, say that they are regulated by an official authority. Interestingly, five of six respondents who are not regulated are based in Baltic countries and one in Central Europe. From Table 9 we find, that in hand-collected data 79%, or 85 platforms, are regulated. Regulation itself does not necessarily indicate a good-quality platform, but it can be seen as a feature which mitigates the platform risk. Namely, regulation creates not only a framework how to operate in the market but also a relevant risk protection for investors (European Crowdfunding Network 2017). For example, British regulator FCA demands platforms to set aside regulatory capital to prepare a possible default of a platforms. That kind of regulation is naturally beneficial from an investor's point of view. Further, according to one respondent, Belgian authority demands a continuity strategy from the platforms, in the case that they go bankrupt.

In addition to official regulators, many platforms have founded associations to enhance transparency and self-regulation on the crowdlending market. For example, a Latvian-based respondent answered that even though their platform is not regulated, they are cooperating with the local regulator in order to create a crowdfunding law in Latvia.

Therefore, it can be favorable also from platforms point of view to be regulated, in order to improve their creditworthiness and attractiveness among investors.

6.3.4 Loan Agreements and Disaster Policy

17 out of 19 respondents stated that the debt obligations are made straightly between the investor and the borrower, or on marketplace platforms, between the investor and the loan originator (Table 10). It means that the platform is not part of the loan agreement, which is a good thing from the investor's point of view. One platform has a different structure, a securitization vehicle, where investors' money are collected into a fund and the fund is officially the debtor. Instead, the investors, co-own the assets of the fund. Further, one respondent declares that the debtor is officially the lending platform, which can be seen quite alarming from investors' perspective.

Additionally, all the platforms stated that the investors' assets are kept separate from the platform's assets, except the respondent who is having the fund structure. To the question what happens to investor's investments if the platform goes bankrupt, most of the respondent said that they have a run-off plan and that the contract between the lender and the borrower, or the loan originator, holds. Some of the platforms have set some amount of capital aside, whereas some have an agreement with a third-party to continue the operations after the platform's bankruptcy. Due to the fact that the crowdlending market is young and evolving, the platforms are seen as young growth companies, which increases the risk of bankruptcy. In fact, in the questionnaire we asked if the platform made profit in 2018 and 58% of the platforms report that they made a loss in the fiscal year 2018, as can be seen in Table 10.

6.4 Other Risks

6.4.1 Platform Risk Evaluation

Platforms can mitigate the liquidity risk related to loans by organizing a secondary market where investors can buy and sell loans between each other. We found from our hand-collected data that 55% of the platforms offer a secondary market, as shown in Table 9. For marketplace platforms it is less common to have a secondary market,

since only five out of 15 platforms offer secondary market for investors. From the questionnaire, the results are similar, since 47% of the platform reports that they offer a secondary market. It is crucial to understand, that having a secondary market doesn't guarantee the functionality of the market, meaning that someone is on the buy-side. Further, investors might have to sell the loans at a discount and using secondary market might include other fees. In the questionnaire, five out of nine respondents report transaction fees for investors, varying between 0.25% and 1.5% of the loan amount (Table 10).

6.4.2 Interest Rate Risk Evaluation

In Table 10, we find that 89% of the respondents use fixed interest rates in the loans. This seemed to be the norm in a crowdlending market. Two respondents, who use floating rates besides fixed rates, said that the nature of rates vary across investments and that part of the rates are performance-related. Fixed interest rates exposes investors to interest rate risk and borrowers might refinance their loans if the rates go down. When asked about borrower's possibility to prepay the loan and a plausible penalty rate for that, 18 out of 19 respondents said that borrowers are able to prepay the loan, and only three respondents reported that investors receive an additional interest payment (Table 10). Two respondents said that the penalty rate depends on the contract and 13 respondents reported that borrowers can prepay the loan without penalty rate.

6.4.3 Other Risks

68% of the respondents reported having an auto-invest feature on their platform (Table 10). The results with hand-collected data are similar in Table 9, since we found that in 71% of the platforms an investor can use a tool which automatically allocates one's investments according to a pre-set investment strategy. Auto-investing is more common in consumer lending than business and property lending, due to the larger amount and smaller size of loans. These results are well in-line with the crowdlending industry reports presented in Chapter 3 (B. Zhang et al. 2018, Ziegler et al. 2018c).

From Table 11 we see that pricing mechanisms of loans differ quite a lot between platforms. In hand-collected data we found 98 observations, from which 66% of

platforms sets the rate by themselves. Further, 20% of platforms report on their website that they have an auction-based pricing model for pricing the loans. Additionally, 13% report that the loan originator sets the rate of return for investors and all of these platforms were, naturally, marketplace lenders. Only two marketplace lenders reported having a platform-led pricing.

Table 11. Loan pricing mechanism, both datasets.

Pricing mechanism of the loans	Observations	Proportion
Questionnaire respondents	19	
Pricing by		
The platforms	9	47 %
The loan originator	3	16 %
The auction	4	21 %
The borrower	1	5 %
The platform and auction	2	11 %
Total	19	
Hand-collected data	98	
Pricing by		
The platform	65	66 %
The loan originator	13	13 %
The auction	20	20 %
Total	98	

In the questionnaire, 9 respondents, or 47%, reported that interest rates are set by the platform's own credit scoring process, 21% reported auction-mechanism and 11% reported that they are using both auction and platform-led pricing. Three marketplace lenders reported that loan originators set the rate when they are selling the claim rights to investors. One respondent said, that the issuing company itself, meaning the actual borrower, determines the interest rate. There have been complaints about the bid auction-style as it is seen as too complex and less transparent than platform-led pricing of the loans from investors' perspective (Chen et al. 2014). The results support this by showing that most of the platforms use their own pricing mechanism. However, surprisingly many platforms are still using auction in pricing.

In the questionnaire, 15 out of 19 platforms reported that they have institutional investors investing through the platform, as can be seen in Table 10. The proportion

of institutional investments of the total volume varies between 2 and 70 percent in the sample. It is not surprising that most of the platforms have professional investors on their websites, since as previously discussed in Chapter three, there is an increase of institutionalization, but the share of institutional investments could have been larger. However, it might tell more about the diverse sample including relatively young platforms.

7 INVESTORS' CHALLENGES IN CROWDLENDING MARKET

Investors face multiple challenges when investing in consumer loans and SME loans through crowdlending platforms. The short history of the whole market, the lack of transparency and the weak comparability makes it difficult for investors to evaluate the risks and returns that platforms can offer. In any case, the fact is that the crowdlending market provides attractive returns and a great opportunity to diversify an investment portfolio for both individuals and institutions, which drives the market's growth as a new alternative asset class. Inside this asset class risk exposures differ a lot, and investors can choose between consumer loans, business loans, property loans, invoice financing or marketplace lending, which essentially means the financing of credit agencies. Further, investors can diversify their investments in multiple countries, although the regulation in the Europe is divergent from country to country which causes some unnecessary restrictions.

Assuming that investors want to invest passively in some segment of this asset class through platform's own auto-invest tool, the most important decision that investors have to make, is the platform selection. This is a relevant assumption given that, as we can see from Cambridge's industry reports, almost all of the investment in consumer and business loans are made by auto-selection (B. Zhang et al. 2018, Ziegler et al. 2018c). If an investor selects to allocate a portion of her portfolio in consumer loans, she has multiple options across Europe. The only way to get a proper understanding of the returns and risks is to conduct a due diligence check for each of the platforms and compare their characteristics with each other. Due to the lack of transparency, it usually means that she has to contact the platform in person to get the required information, such as detailed information about the credit scoring process, the loan book, platforms own skin-in-the-game to the issued loans and run-off plans in case of a platform failure, just to name a few. Getting the information is probably easier for an institutional investor who have a larger investment capacity, but for individual investors platforms are not willing to open up their operations too much. We also noticed this by sending emails to 139 European lending platforms and receiving only 19 responses.

Even though the investor would get access to the information of the platforms, evaluating risk-return relation is complex, since the comparability of platforms is difficult. Platform practices are different, for instance, when asking how many days a loan payment has to be late before the loan is recognized defaulted. When comparing two consumer lending platforms from different countries, the laws and regulation as well as the general payment habits diverge between nations. Further, part of the consumer lending platforms are marketplace platforms selling claim rights of loans issued by credit institutions, which makes the risk exposure totally different and therefore, also the comparison even more challenging.

Some lending platforms offer 5% annual returns and some as high as 12% returns. Especially when evaluating platforms issuing consumer loans with very high interest rate, investors faces also an ethical problem. Usually, only people who are financially illiterate or already financially distressed, take these payday loans and often, they lead to over-indebtedness or strengthen the financial distress of the consumer. Higher returns naturally attract investors more, but usually the risks are also significantly higher. Borrowers are riskier, which means that the interest rates as well as default rates are higher. Further, the platforms offering higher returns usually lack secondary market and regulation and hence, liquidity of the assets and investor protection is weaker. However, there exists great opportunities also in riskier platforms for investors to earn large returns. To find these opportunities, however, requires a holistic due diligence for platforms.

The fact is also, that no matter how well investors will do their research, there exists a relative large amount of uncertainty when investing on crowdlending platforms. For instance, even though a platform has run-off plans in case of the platform bankruptcy, how smooth does the change of the operator go in reality? Further, if an investor buys claim rights from a loan originator and the loan originator defaults, how does the lender actually get debt down payments, even though theoretically the investor has the claim right? Naturally, uncertainty is always present when investing, but these uncertainties and risks can be mitigated by selecting only platforms operated by financially stable companies or buying claim rights from only financially stable loan originators.

8 CONCLUSION

Crowdfunding as a phenomenon has faced a transition from a non-professional funders' supportive tool to finance projects to a sophisticated investors' alternative investment product. Diverging from its original purpose, investments nowadays in crowdfunding are mostly done in lending-based instruments with platforms' auto-invest tool instead of selecting projects one-by-one, and the motive for investments are usually financial rather than social, e.g. supporting a good cause. Further, the number of platforms providing consumer and business loans has grown rapidly, which gives investors a lot of options to choose from. The comparison of platforms is, however, difficult due to platforms' diverge product offerings and business models, lack of transparency especially in terms of returns and different regulatory environment between countries.

From an investor's perspective, key risks in crowdlending are credit risk, platform risk, liquidity risk, regulatory risk, information risk, interest rate risk, systemic risk and fraud risk. Most of these risks can be controlled by platforms with high-class risk policies. For example, the quality of the credit assessment process, or borrower selection, has a direct influence on credit risk. Furthermore, by offering a secondary market for the loans, a platform can mitigate the liquidity risk that the investors are facing. Also platform risk is lower if platforms are financially stable, they are regulated and supervised, and have run-off plans if they stop operations.

In the study, I find that evaluating risks and returns of platforms is difficult due to the lack of transparency and weak comparability. Most of the platforms are not interested in opening up their credit scoring process, which makes the evaluation of credit risk difficult. Further, most of the platforms are less than 5 years old, which means that they have a short track record, to see the historical returns and default rates. Some risks are, however, easier to measure. For example, in the UK regulation protects investors with multiple rules, which mitigates platform risk significantly. On the other hand, in Latvia, where many marketplace lenders are based, there are no crowdfunding regulation or supervision at all.

This study is seminal by its originality and contributes to existing literature by creating a useful framework how to evaluate and compare lending platforms from investors' perspective. Further, the study gives a wide overview of European crowdlending platforms, their practices and the key risks related to lending-based crowdfunding. No equivalent studies about European crowdlending market or the risks exist in current literature. By measuring and following risk factors evaluated in this study, investors are able to compare lending platforms with each other and understand their own risk exposure better. The only way to get a proper understanding, however, is to dig in to platforms' operations and perform a profound due diligence for platforms before investing, and the methods used in this study give reasonable guidelines for that. This process is naturally easier and more cost-efficient for institutional investors than individual investors.

I believe, and hope, that this study attracts future researches to investigate lending-based crowdfunding platforms more from investors' perspective, hopefully with better quality data that was gathered in this study. Professional investors are moving more and more to this asset class following great returns and diversification that crowdlending can offer and the most vital decision for investors is the platform selection. The lending market as well as the number of platforms are growing rapidly, but this topic has not yet been covered. Quite a lot of studies are made investigating risks at a loan-level, but researchers should focus more on risks and returns at a platform-level, since that's more crucial from investors' perspective, who usually invests using auto-invest tool. Platform-level investigation includes many problems, such as data problem, weak comparability and the lack of transparency, but the need for deeper understanding of the risks and returns is present, and a far more crucial question to be answered from investors point of view.

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APPENDIX 1. THE QUESTIONNAIRE SHEET

BASIC INFORMATION

- What is the name of your lending platform?
- In which year was the platform founded?
- In which country is the platform based?
- What type of loans do you provide?
- How much funding in Euros has been raised through the platform by the end of 2018?
- What is the number of loans that has been funded on your platform by the end of 2018?
- From which countries are the borrowers from?
- Is the company regulated by some authority? Which one?
- What is the jurisdiction/applicable law that the platform must obey?
- Does your company invest in the loans on the platform? (skin-in-the-game)
- In what way are the investments made and what is the proportion of platform's investments of the total investing volume?
- Is a Finnish investor able to invest through your platform?
- Do you issue the loans yourself or do you act as a marketplace between originators and investors?
- How many loan originators do you have on your marketplace?
- What does your Due Diligence process for originators include? Please describe the process.
- Do you do Due Diligence for single loans that originators issue on the marketplace?
- Do originators have skin-in-the-game in the loans?

PLATFORM'S BUSINESS MODEL

- From which sources does the platform gain revenue?
- What fees do you invoice from the borrower? How much are the fees?
- What fees do you invoice from the lender? How much are the fees?
- What fees do you invoice from the loan originator? How much are the fees?
- How much was the company's revenue in Euros in 2018? (Preliminary)
- How much was the company's profit/loss in Euros in 2018? (Preliminary)

THE LOANS

- What can be the minimum single loan amount on your platform in Euros?
- What can be the maximum single loan amount on your platform in Euros?
- What can be the minimum single loan maturity on your platform in months?
- What can be the maximum single loan maturity on your platform in months?
- How are interest rates set on your platform?
- The interest rates are
- Do the interest rates that the borrowers pay, go to lenders at full? Or does the platform or the originator take part of it?
- Is there a secondary market for the loans?

- If the lender wants to sell the loan in the secondary market, is there transaction fees for the lender? How much are the fees?
- Are the loans asset backed? What kind of collaterals/guarantees/covenants do you use?
- Do you have a provision fund or compensation fund for the lenders? Does it cost something for the lenders?
- Can borrowers prepay the loan? If yes, is there a penalty rate in case of a prepayment and how much is it?
- If a new loan is not fully invested, do you lend the money in any case?
- Does the platform have an auto-invest feature?
- Do you have institutional investors investing through your platform?
- What is the proportion of institutional investments of the total volume?

BASED ON THE HISTORICAL DATA OF YOUR PLATFORM, WHAT IS..

- The average loan size in Euros?
- The average loan maturity in months?
- The average interest rate?
- The average annual return for the investors?
- The average default rate?
- The average onboarding/qualification rate?
- The average success rate?

TRANSPARENCY AND DEFAULTS

- How do you calculate vital concepts such as "arrears" and "defaults"? When do you consider a loan as defaulted? What is your expected default rate?
- Do you actively manage late payments and try to recover defaulted loans? How?
- Is there a penalty rate for delayed payments?
- How much is the penalty rate for delayed payments?
- Do you have a buyback guarantee for defaulted loans or do you sell the defaulted loans to a third party? What is the buyback percentage of the loan amount? Does it also include interest?
- Is your whole loan book publicly available?
- Can investors get the loan book on demand?
- Does the platform report the loan book performance / investors' portfolio performance to the investors regularly?
- If the platform goes bankrupt, what happens to the lenders' investments? Please describe the process in case of the platform's default.
- Are the debt obligations made officially between every single lender and the borrower? Or is the debtor officially the lending platform?
- Can it be shown that investors' assets (debt obligations, cash balance, other) are separated from the platform's assets?

CREDIT SCORING, CONSUMER LOANS

- What information is collected and analyzed from the borrower?
- Have you outsourced the credit scoring process or do you execute it yourself?
- Does the credit rating process include manual work or is it totally automatic?
- Do you interview the borrower?
- Which data sources are utilized?
- Do you categorize loans to different risk rating categories? (e.g. A-BBB) How many categories do you have?
- How many different variables do you analyse in your credit assessment process in total? Which ones are the most important? Please feel free to describe the credit scoring process.

CREDIT SCORING, BUSINESS LOANS

- Do you have different categories for different types of loans? (working capital, real estate, invoicing, other..) How many categories do you have and what are they?
- What information is collected from the borrower?
- Have you outsourced the credit scoring process or do you execute it yourself?
- Does the credit rating process include manual work or is it totally automatic?
- Do you interview the applicant's contact person?
- Which data sources are utilized?
- Do you categorize loans to different risk rating categories? (e.g. A-BBB) How many categories do you have?
- How many different variables do you analyse in your credit assessment process in total? Which ones are the most important? Please feel free to describe the credit scoring process.